

REMARKS

This is in response to the Office Action dated July 13, 2007. In the Office Action, all pending claims 1-18, 23-41, 46-64, 69-77 and 82-111 were rejected. With this Amendment, claim 1 has been amended and the remaining claims are unchanged in the application. Applicant respectfully requests reconsideration and allowance of all pending claims.

Applicant respectfully requests that the claim amendment be entered because it simply places claim 1 in a better form for appeal. No new issues are involved.

In Section 2 of the Office Action, claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Palfey et al., U.S. Patent No. 6,177,737.

Applicant respectfully points out that, because the apparatus of claim 1 is for counteracting self discharge in a storage battery, it includes “a charge supply battery configured to provide a supply voltage, and a DC-DC converter circuit having an input electrically coupled to the charge supply battery and an output configured to electrically couple to terminals of the storage battery, wherein the charge supply battery is of a different type and construction than the storage battery.”

The Office Action suggests that in Palfey, which is directed to a vehicle electrical power backup circuit and method, the combination of the car battery, items 10, 18, 12 and 40, and item 14 of figure 1 show the above elements and limitations of claim 1. The Office Action indicates that items 10, 18, 12 and 40 are a DC-DC converter circuit of the type required by claim 1. This is incorrect and lacks clarity. Item 10 is the entire electrical back-up circuit of Palfey, which includes items 12, 14, 18 and 40. In Palfey, item 12, which has an input 18, is a charging circuit for providing or maintaining electrical charge in the storage battery 14. None of items 12, 14 and 18 include a DC-DC converter circuit. Further, Applicant respectfully points out that, in figure 1 of Palfey, item 40 is only connected to battery 14 and is independent of any other battery in the apparatus of Palfey. In fact, Palfey is specifically configured such that booster circuit 44 (included in item 40) is isolated from the vehicle electrical system that includes the car battery. Specifically, column 5, lines 26-28 state that:

The battery voltage output V_b , and hence the output **42** of the booster circuit **44** at LX, is isolated from the vehicle electrical

system by the blocking diode D1.

Thus, in Palfey, the booster circuit voltage V_{BOOST} is neither provided to the car battery nor to battery 14, but to vehicle electrical devices that need this voltage when the vehicle electrical system (that includes the car battery) fails. Such a circuit is suitable for the electrical power backup system of Palfey, but is unrelated to, and unsuitable for, the claimed invention.

In summary, Palfey teaches or suggests nothing about a DC-DC converter circuit having an input electrically coupled to a charge supply battery and an output configured to electrically couple to terminals of the storage battery, wherein the charge supply battery is of a different type and construction than the storage battery. Therefore, claim 1 is non-obvious and allowable over Palfey.

In section 3 of the Office Action, claims 2-18 and 82-94 were rejected under 35 U.S.C. §103(a) as being unpatentable over Palfey, in combination with a paper published by Electronix Express (a non patent publication, November 10, 1998).

For reasons provided above, Palfey does not teach or suggest a DC-DC converter circuit having an input electrically coupled to a charge supply battery and an output configured to electrically coupled to a storage battery, which is of a different type and construction than the charge supply battery. The Electronix Express published paper does not overcome the deficiencies of Palfey. Thus, claims 2-18 and 82-94 are non-obvious and allowable over the combination of Palfey and the Electronix Express published paper.

In Section 4 of the Office Action, claims 23-41 and 95-100 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tomantschger, U.S. Patent No. 5,637,978 in combination with a paper published by Electronix Express (a non patent publication, November 10, 1998) and Bertness, U.S. Patent No. 6,249,124.

Tomantschger discloses a booster battery assembly having a booster battery that is not protected from self-discharge by a charge supply battery and a DC-DC converter. The Electronix Express published paper only describes, in general, the design and operation of DC-DC converters, and Bertness relates to an electronic battery tester with an internal battery. None of these references taken alone or in combination teach or suggest a DC-DC converter circuit having an input

electrically coupled to a charge supply battery and an output electrically coupled to a storage battery (or booster battery), which is of a different type and construction than the charge supply battery. Furthermore, the Examiner provided no evidentiary basis for modifying the cited references to arrive at the claimed invention. Thus, claims 23-41 and 95-100 are non-obvious and allowable over the cited art.

In Section 5 of the Office Action, method claims 46-64, 69-77 and 101-111 were rejected for the same reasons in the earlier sections in connection with the apparatus claims.

For reasons provided above, Applicant believes that method claims 46-64, 69-77 and 101-111 are non-obvious and allowable over the cited art. Further, although some method claims differ substantially from the apparatus claims, the Office Action has not addressed these differences in the rejection. For example, independent method claims 46 includes "providing a charging voltage to the storage battery as a function of the supply voltage, with the charging voltage having a magnitude greater than a magnitude of supply voltage." Although a similar element does not appear in the independent apparatus claims, the Office Action does not address this element. In any event, Palfey teaches or suggests nothing about this element. The remaining references do not compensate for the deficiencies of Palfey.

In view of the foregoing, Applicant respectfully requests reconsideration and allowance of all pending claims 1-18, 23-41, 46-64, 69-77 and 82-111. Favorable action upon all claims is solicited.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,
WESTMAN, CHAMPLIN & KELLY, P.A.
By: AREgo
Alan G. Rego, Reg. No. 45,956
900 Second Avenue South, Suite 1400
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

AGR:tkj